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Mineral Industry Surveys

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CHROMIUM IN NOVEMBER 2005

On the basis of gross weight, consumption of chromium ferroalloys and metal in November 2005 decreased 5% compared with consumption in October 2005, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. Government stockpile inventory of chromium materials in November 2005, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of November 2005, and U.S. foreign trade data for selected chromium-containing materials in October 2005.

Update

The Defense National Stockpile Center (DNSC) announced that 2,268 metric tons (t) of ferrochromium comprising 1,814 t of high-carbon ferrochromium and 454 t of low-carbon ferrochromium was sold in December at a value of $2.5 million or $0.50 per pound gross weight (Defense National Stockpile Center, 2006a).

DNSC issued an Amendment No. 7 to DLA-Chromium metal-02 Invitation for bids for chromium metal that offers 598 t of chromium metal for sale. Copies of the solicitation and amendment can be obtained from Christopher Hall at (703) 767-5498 or by visiting the DNSC Web site at https://www.dnsc.dla.mil (Defense National Stockpile Center, 2006b).

References Cited

Defense National Stockpile Center, 2006a, Stockpile announces ferrochromium sales for December 2005: Defense National Stockpile Center, News Release DNSC-06-2708, January 5, 1 p.

Defense National Stockpile Center, 2006b, Stockpile issues amendment for chromium metal: Defense National Stockpile Center, News Release DNSC-06-2714, January 5, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

	2004	2005					
	January-December	August	September	Third quarter	October	November	January-November[2]
Production:							
Stainless steel production[3]	2,400,000	167,000	180,000	484,000 r	174,000	178,000	2,050,000 [4]
Components of U.S. supply:							
Stainless steel scrap receipts	987,000	56,100	61,300	171,000	68,900	68,100	674,000
Stainless steel scrap consumption	1,410,000	85,000	87,000	253,000	94,000	99,900	973,000
Imports for consumption:							
Chromite ore	153,000	17,000	20,900	62,200	17,900	NA	142,000 [5]
Ferrochromium:							
More than 4% carbon	398,000	31,100	12,700	72,700	53,700	NA	353,000 [5]
More than 3% carbon but not more than 4% carbon	30	--	--	--	--	NA	-- [5]
More than 0.5%, but not more than 3% carbon	5,720	--	20	--	--	NA	3,530 [5]
Not more than 0.5% carbon	31,400	3,210	2,340	7,800	3,610	NA	35,700 [5]
Ferrochromium silicon	30,600	3,880	--	6,190	3,980	NA	30,700 [5]
Total ferroalloy imports	466,000	38,200	15,000	86,700	61,300	NA	423,000 [5]
Chromium metal[6]	9,630	1,010	581	2,530	642	NA	9,290 [5]
Stainless steel	811,000	63,400	57,600	181,000	57,500	NA	652,000 [5]
Stainless steel scrap	146,000	5,360	5,900	19,600	6,740	NA	93,700 [5]
Distribution of U.S. supply:							
Consumption, industry, chromium ferroalloys and metal	454,000	35,900	34,200	105,000	34,900	33,300	381,000
Exports:							
Chromite ore	43,100	6,060	7,760	15,500	1,320	NA	41,300 [5]
Chromium ferroalloys:							
High-carbon ferrochromium	6,580	343	369	24,200	265	NA	30,000 [5]
Low-carbon ferrochromium	1,410	231	207	1,660	306	NA	4,180 [5]
Ferrochromium silicon	1,150	10	--	58	5	NA	120 [5]
Total ferroalloy exports	9,140	584	577	26,000	577	NA	34,300 [5]
Chromium metal	931	130	115	296	39	NA	779 [5]
Stainless steel	323,000	28,200	27,200	83,100	24,200	NA	311,000 [5]
Stainless steel scrap	478,000	44,700	52,600	138,000	46,000	NA	480,000 [5]
Stocks at end of period:							
Consumer, industry, chromium ferroalloys and metal	XX	13,000	12,700 r	XX	12,900 r	12,800	XX
Government stockpile:							
Chromium ferroalloys	XX	510,000	503,000	XX	498,000	494,000	XX
Chromium metal	XX	6,190	6,210	XX	6,190	6,190	XX

rRevised. NA Not available. XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

[4]Includes revised data that is not broken out by specific month.

[5]Includes January through October data; November data not available.

[6]Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS
OF CHROMIUM PRODUCTS IN 2005[1, 2]

(Metric tons, gross weight unless otherwise noted)

	October	November	January-November[3]
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	317	314	3,930
High-strength low-alloy steel	631	629	6,860
Stainless and heat-resisting steel	30,200	28,700	328,000
Full alloy steel	1,600	1,450	17,500
Electrical steel	W	W	W
Tool steel	422	422	4,850
Unspecified steel	W	W	W
Cast irons	W	W	W
Superalloys	823 r	807	9,130
Other alloys[4]	44	39	622
Total	34,900	33,300	381,000
Total, chromium content	20,300	19,400	222,000
Consumption by material:			
Low-carbon ferrochromium	1,750	1,740	20,700
High-carbon ferrochromium	29,300 r	28,000	321,000
Ferrochromium silicon	3,170	2,940	33,000
Chromium metal	496 r	489	4,980
Chromite ore	W	W	W
Chromium-aluminum alloy	28	27	318
Other chromium materials	W	W	W
Total	34,900	33,300	381,000
Total, chromium content	20,300	19,400	222,000
Consumer stocks:			
Low-carbon ferrochromium	1,980 r	1,970	XX
High-carbon ferrochromium	9,310	9,180	XX
Ferrochromium silicon	1,310	1,480	XX
Chromium metal	185 r	123	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	38 r	33	XX
Other chromium materials	W	W	XX
Total	12,900 r	12,800	XX
Total, chromium content	7,590	7,500	XX

rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes estimates.

[3]May include revised data.

[4]Includes welding and alloy hard-facing rods and materials; wear- and corrosion-resistant alloys; and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY
OF CHROMIUM MATERIALS[1, 2]

(Metric tons)

Period	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2004:			
November	398,000	191,000	6,670
December	398,000	191,000	6,670
2005:			
January	386,000	190,000	6,190
February	378,000	188,000	6,190
March	368,000	187,000	6,190
April	359,000	187,000	6,190
May	359,000	187,000	6,190
June	331,000	182,000	6,190
July	328,000	180,000	6,190
August	324,000	187,000	6,190
September	327,000 [3]	176,000	6,210 [3]
October	323,000	175,000	6,190
November	320,000	174,000	6,190

[1]Data are rounded to no more than three significant digits.

[2]These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract, however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

[3]The increase resulted from the reclassification of physical inventory from committed to uncommitted. It did not result from the addition of chromium materials to the stockpile.

Source: Defense National Stockpile Center.

TABLE 4

U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL[1]

Period	Chromite ore		Chromium ferroalloys[2]			Chromium metal[3]	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2004:							
October	823	$270	565	347	$799	58	$1,190
November	507	197	616	398	843	46	1,020
December	771	231	639	388	897	51	657
January-December	43,100	10,400	9,140	5,320	12,000	931	17,600
2005:							
January	2,550	618	427	257	610	103	1,070
February	1,540	404	2,150	1,330	2,910	35	796
March	7,910	1,310	3,050	1,850	4,070	66	983
April	6,930	1,820	686	419	913	85	1,580
May	5,040	923	653	402	804	64	1,190
June	516	190	776	486	1,010	91	1,520
July	1,670	697	24,800	16,600	23,800	51	781
August	6,060	1,420	584	356	789	130	1,560
September	7,760	1,320	577	356	680	115	1,940
October	1,320	600	577	355	828	39	1,410
January-October	41,300	9,300	34,300	22,400	36,500	779	12,800

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

[3]Includes chromium metal waste and scrap and unwrought powders.

Source: U.S. Census Bureau.

TABLE 5

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2004	2005		
	January-December	September	October	January-October[2]
Chromite ore:				
Not more than 40%:				
Gross weight	--	--	36	36
Chromic oxide content	--	--	11	11
More than 40% but less than 46% chromic oxide:				
Gross weight	1,690	12,200	24	29,600
Chromic oxide content	761	5,590	11	13,600
46% or more chromic oxide:				
Gross weight	151,000	8,690	17,800	112,000
Chromic oxide content	71,600	4,070	8,570	52,900
Total, all grades:				
Gross weight	153,000	20,900	17,900	142,000
Chromic oxide content	72,400	9,670	8,590	66,600
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5%:				
Gross weight	31,400	2,340	3,610	35,700
Chromium content	21,100	1,630	2,290	24,300
More than 0.5% but not more than 3%:				
Gross weight	5,720	20	--	3,530
Chromium content	3,830	14	--	2,300
Total, low-carbon:				
Gross weight	37,100	2,360	3,610	39,200
Chromium content	24,900	1,640	2,290	26,600
Medium-carbon:[4]				
Gross weight	30	--	--	--
Chromium content	16	--	--	--
High-carbon:[5]				
Gross weight	398,000	12,700	53,700	353,000
Chromium content	223,000	6,650	30,400	205,000
Total, all grades:				
Gross weight	435,000	15,000	57,300	392,000
Chromium content	248,000	8,290	32,700	232,000
Chromium metal:				
Unwrought powders	1,350	68	69	825
Waste and scrap	74	3	35	52
Other than waste and scrap and unwrought powders	8,200	510	538	8,410
Total, all grades	9,630	581	642	9,290

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 3% carbon but not more than 4% carbon.

[5]Ferrrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2005, BY GRADE AND BY COUNTRY[1]

Grade and country	October			January-October[2]		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)
High-carbon ferrochromium:[4]						
Australia	--	--	--	13	9	$11
China	--	--	--	13	8	11
Kazakhstan	16,600	11,500	$14,300	97,100	67,300	97,500
Russia	20	13	$26	30,300	20,000	25,800
South Africa	31,800	15,700	17,900	176,000	88,400	110,000
Sweden	--	--	--	160	107	184
Zimbabwe	5,290	3,160	3,770	49,000	29,100	39,100
Total	53,700	30,400	36,000	353,000	205,000	272,000
Low-carbon ferrochromium:[5]						
More than 0.5% but not more than 3% carbon:						
India	--	--	--	20	13	17
Kazakhstan	--	--	--	870	601	1,370
Russia	--	--	--	1,830	1,240	2,030
South Africa	--	--	--	810	446	905
Total	--	--	--	3,530	2,300	4,330
Not more than 0.5% carbon:						
China	3	2	5	94	66	212
France	--	--	--	4	3	8
Germany	305	205	732	4,250	2,980	8,420
Japan	479	335	1,480	2,390	1,680	6,770
Kazakhstan	569	394	845	3,340	2,290	5,070
Russia	653	452	1,060	23,500	16,100	34,200
South Africa	1,600	900	1,680	2,100	1,170	2,080
Turkey	--	--	--	4	2	8
Total	3,610	2,290	5,790	35,700	24,300	56,800
All grades:						
Australia	--	--	--	13	9	11
China	3	2	5	107	74	223
France	--	--	--	4	3	8
Germany	305	205	732	4,250	2,980	8,420
India	--	--	--	20	13	17
Japan	479	335	1,480	2,390	1,680	6,770
Kazakhstan	17,200	11,900	15,100	101,000	70,200	104,000
Russia	673	465	1,080	55,600	37,400	62,000
South Africa	33,400	16,600	19,600	179,000	90,100	113,000
Sweden	--	--	--	160	107	184
Turkey	--	--	--	4	2	8
Zimbabwe	5,290	3,160	3,770	49,000	29,100	39,100
Total	57,300	32,700	41,800	392,000	232,000	333,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Ferrochromium containing more than 4% carbon.

[5]Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 7

U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2005, BY GRADE AND BY COUNTRY[1]

Grade and country	October		January-October[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
Brazil	--	--	(4)	$2
China	31	$304	266	2,240
France	3	17	15	104
Germany	--	--	13	147
Japan	13	601	250	6,980
Korea, Republic of	--	--	1	22
Malaysia	--	--	1	6
Russia	22	162	222	1,270
Spain	--	--	57	248
Sweden	--	--	(4)	3
United Kingdom	--	--	2	419
Total	69	1,080	825	11,400
Waste and scrap:				
Germany	--	--	6	94
Japan	1	25	12	166
Singapore	34	186	34	190
Total	35	211	52	450
Other than waste and scrap and unwrought powders:				
Austria	--	--	2	17
Canada	--	--	1	7
China	144	896	2,180	11,100
France	236	1,850	2,090	16,600
Germany	7	63	38	324
India	--	--	1	5
Japan	-4	5	32	1,080
Russia	97	812	2,630	23,900
United Kingdom	54	392	1,430	9,260
Total	538	4,020	8,410	62,300
All grades:				
Austria	--	--	2	17
Brazil	--	--	(4)	2
Canada	--	--	1	7
China	176	1,200	2,450	13,400
France	239	1,870	2,100	16,700
Germany	7	63	57	566
India	--	--	1	5
Japan	15	631	294	8,220
Korea, Republic of	--	--	1	22
Malaysia	--	--	1	6
Russia	118	974	2,850	25,200
Singapore	34	186	34	190
Spain	--	--	57	248
Sweden	--	--	(4)	3
United Kingdom	54	392	1,430	9,680
Total	642	5,310	9,290	74,200

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8

U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2005[1]

Stainless steel product	October		January-October	
	Gross weight (metric tons)	Value[2] (thousands)	Gross weight (metric tons)	Value[2] (thousands)
Exports:				
Ingot	714	$3,420	6,930	$35,500
Flat-rolled (width > 600 mm)	10,200	28,000	140,000	384,000
Flat-rolled (width < 600 mm)	6,750	24,900	97,800	349,000
Bars and rods in irregular coils	372	1,220	5,150	15,500
Other bars and rods	2,180	13,700	23,000	132,000
Wire	571	3,920	4,860	37,300
Tubes, pipes, hollow profiles	3,430	21,400	33,000	185,000
Total	24,200	96,500	311,000	1,140,000
Stainless steel scrap	46,000	59,400	480,000	550,000
Grand total	70,300	156,000	791,000	1,690,000
Imports:				
Ingot	9,430	29,300	125,000	353,000
Flat-rolled (width > 600 mm)	24,100	61,500	252,000	670,000
Flat-rolled (width < 600 mm)	3,050	12,400	36,500	145,000
Bars and rods in irregular coils	2,130	6,960	32,900	95,600
Other bars and rods	7,620	30,300	87,400	340,000
Wire	3,290	14,500	33,600	147,000
Tubes, pipes, hollow profiles	7,940	52,400	85,400	483,000
Total	57,500	207,000	652,000	2,230,000
Stainless steel scrap	6,740	6,830	93,700	107,000
Grand total	64,300	214,000	746,000	2,340,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 9
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2004:							
10/01	120	135	85 - 120	125 - 150	100 - 120	75 - 95	125 - 145
10/08	120	135					
10/15	120	135					
10/22	120	135					
10/29	120	135					
11/05	120	135	85 - 120	125 - 150	100 - 120	75 - 95	125 - 145
11/12	120	135					
11/19	120	135					
11/26	120	135					
12/03	120	135	85 - 125	130 - 150	100 - 120	75 - 95	125 - 145
12/10	130	145					
12/17	130	145					
12/24	130	145					
12/31	130	145					
2005:							
01/07	130	145	75 - 125	120 - 140	100 - 120	70 - 80	125 - 145
01/14	130	145					
01/21	140	155					
01/28	140	155					
02/04	140	155	125 - 150	170 - 190	100 - 120	80 - 90	125 - 145
02/11	140	155					
02/18	150	175					
02/25	165	190					
03/04	175	195	125 - 150	170 - 190	100 - 120	80 - 90	125 - 145
03/11	175	195					
03/18	175	195					
03/25	175	195					
04/01	175	195	125 - 150	175 - 195	100 - 120	85 - 95	125 - 145
04/08	180	200					
04/15	180	200					
04/22	180	200					
04/29	180	200	125 - 150	175 - 195	100 - 120	85 - 95	125 - 145
05/06	180	200					
05/13	180	200					
05/20	180	200					
05/27	180	200					
06/03	175	195	125 - 145	175 - 205	100 - 120	85 - 100	125 - 145
06/10	175	195					
06/17	175	195					
06/24	155	175					
07/01	150	170	120 - 140	170 - 200	100 - 120	80 - 100	125 - 145
07/08	150	170					
07/15	150	170					
07/22	150	170					
07/29	140	160					
08/05	140	160	120 - 140	176 - 209	100 - 120	80 - 100	125 - 145
08/12	130	150					
08/19	120	140					
08/26	120	140					
09/02	120	140	115 - 135	175 - 205	100 - 120	70 - 100	125 - 145
09/09	120	140					
09/16	110	130					
09/23	110	130					
09/30	110	130					

See footnotes at end of table.

TABLE 9--Continued
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2005:							
10/07	110	130	110 - 130	175 - 200	100 - 120	70 - 95	125 - 145
10/14	110	130					
10/21	110	130					
10/28	110	130					
11/04	105	125	110 - 130	175 - 200	100 - 120	70 - 95	125 - 145
11/11	105	125					
11/18	105	125					
11/25	105	125					
12/02	105	125	105 - 125	170 - 195	100 - 120	65 - 95	125 - 145
12/09	100	120					
12/16	100	120					
12/23	NA	NA					
12/30	NA	NA					

NA Not available.

[1]Turkey 1 (T1) is called 38% - 40% Cr_2O_3 by Ryan's Notes (RN); T2 is called 44% Cr_2O_3 by RN.

[2]South Africa 1 (SA1) is called chemical grade, 46% Cr_2O_3, wet bulk, free on board (f.o.b.) by Industrial Minerals (IM); SA2 is called foundry grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA3 is called refractory grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA4 is called metallurgical grade, friable lumpy, 40% Cr_2O_3 by IM.

[3]Philippines is called refractory grade, f.o.b. by IM.